DOCUMENT RESUME

ED 360 846 FL 021 424

TITLE	Effective Transition (Project E.T.), Final Evaluation Profile. Transitional Bilingual Education 1991-92. OREA Report.
INSTITUTION	New York City Board of Education, Brooklyn, NY. Office of Research, Evaluation, and Assessment.
PUB DATE	7 Jul 92
CONTRACT	T003A10130
NOTE	18p.
AVAILABLE FROM	Office of Research, Evaluation and Assessment, New York City Board of Education, 110 Livingston Street, Room 732, Brooklyn, NY 11201.
PUB TYPE	Reports - Research/Technical (143)
EDRS PRICE	MF01/PC01 Plus Postage.
DESCRIPTORS	*Bilingual Education Programs; Cantonese; Career Education; Dropout Prevention; English (Second Language); High Schools; High School Students; Junior High Schools; Junior High School Students; Mathematics Instruction; Native Language Instruction; Parent Participation; *Program Effectiveness; *Program Evaluation; *Program Implementation; Science Instruction; Social Studies; Spanish; Staff Development; *Transitional Programs
IDENTIFIERS	Content Area Teaching; New York City Board of Education; *Project ET NY

ABSTRACT

Students from Lafayette High School and Pershing Intermediate School in Brooklyn, New York who were of Spanish and Cantonese linguistic backgrounds (and who scored at or below the 40th percentile on the Language Assessment Battery) received intensive instruction in English-as-a-Second-Language (ESL) and native language arts (NLA) in Spanish or Cantonese. Although only 73 students were enrolled in the project, data is provided for a greater number of students. Instruction in math, social studies, science, and computer science was provided in Spanish or Cantonese. Teachers, students, and consultants designed, assembled, and tested a series of science modules; curriculum and staff development components focused on improving the hands-on, process, and concept-based scientific experiences. The project met its objectives for Chinese NLA, content area subjects, the career education objective for the organization of a career conference and advisement, attendance rates, dropout prevention, and parental involvement. The project did not meet its objectives for ESL, staff awareness of pupil needs and problems, and staff development. Data collection and analysis methods and instructional materials are appended. (JP)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED 360 846

OREA Report

Effective Transition
(Project E.T.)
Transitional Bilingual Education Grant T003A10130
1991-92

FINAL EVALUATION PROFILE

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
Robert Tobias
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
☒ This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.
• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

FL021424

BEST COPY AVAILABLE

NEW YORK CITY BOARD OF EDUCATION

H. Carl McCall
President

Irene H. Impellizzeri
Vice President

Carol A. Gresser
Westina L. Matthews
Michael J. Petrides
Luis O. Reyes
Ninfa Segarra
Members

Keysha Z. McNeil
Student Advisory Member

Joseph A. Fernandez
Chancellor

DIVISION OF STRATEGIC PLANNING/RESEARCH & DEVELOPMENT

Robin Willner
Executive Director

It is the policy of the New York City Board of Education not to discriminate on the basis of race, color, creed, religion, national origin, age, handicapping condition, marital status, sexual orientation, or sex in its educational programs, activities, and employment policies, and to maintain an environment free of sexual harassment, as required by law. Inquiries regarding compliance with appropriate laws may be directed to Mercedes A. Nesfield, Director, Office of Equal Opportunity, 110 Livingston Street, Room 601, Brooklyn, New York 11201, Telephone: (718) 935-3320.

7/7/92

BEST COPY AVAILABLE

ACKNOWLEDGMENTS

This report has been prepared by the Bilingual, Multicultural, and Early Childhood Evaluation Unit of the Office of Research, Evaluation, and Assessment.

Additional copies of this report are available from:

Dr. Tomi Deutsch Berney
Office of Research, Evaluation, and Assessment
New York City Public Schools
110 Livingston Street, Room 732
Brooklyn, NY 11201
(718) 935-3790 FAX (718) 935-5490

FOREWORD

The body of this report is preceded by an Extract which presents an overview of salient points of the project: funding cycle; enrollment figures; background of students served; admission criteria; and programming features, strengths, and limitations, including the outcome of all objectives. The extract also presents the conclusions drawn by the Office of Research, Evaluation, and Assessment (OREA) about the program and its recommendations for program improvement.

The extract is followed by the body of the report, titled Program Assessment. This includes such information as staffing, program implementation, and outcome and implementation objectives. Instructional objectives are presented first, followed by noninstructional objectives. The report then addresses those aspects of programming mandated by Title VII regulations that do not have specifically stated objectives. This may be information on attendance and dropout rate, grade retention, mainstreaming, referrals out of the program to meet special needs of the students, and withdrawals. A case history concludes the report.

Data for this profile were collected and analyzed using a variety of procedures, which are described in Appendix A following the text.

Office of Research, Evaluation, and Assessment
New York City Public Schools

E.S.E.A Title VII Evaluation Report

Effective Transition

(Project E.T.)

Transitional Bilingual Education Grant T003A10130
1991-92

EXTRACT

PROJECT DIRECTOR: Dr. Angelo Gatto FUNDING CYCLE : Year 1 of 3

SITES

School	Borough	Grade Levels	Enrollment*	
			(fall)	*(spring)*
Lafayette High School	Brooklyn	9 - 12	N/A	35
Pershing Intermediate School, C.S.D. 20	Brooklyn	6 - 8	31	36

*The project indicated that 73 students were enrolled, 31 in the fall and 71 in the spring. However, the project also provided data for a greater number of students including those who were Spanish-speaking. Demographic data should therefore be regarded as incomplete.

STUDENT BACKGROUND

Native Language		Number of Students	Countries of Origin	Number of Students
Chinese		73	China	62
Cantonese	64		Hong Kong	10
Mandarin	6		Vietnam	1
Other	3			

Median Years of Education in Native Country: 4.5; in the United States: 2.0

Percentage of Students Eligible for Free Lunch Program: 98.6

ADMISSION CRITERIA

The population to be served consisted of students of Spanish and Cantonese linguistic backgrounds who were recent arrivals to this country, and scored at or below the 40th percentile on the Language Assessment Battery (LAB). These students, who were of limited English proficiency (LEP) were selected on the basis of their school records, letters of recommendation from teachers, personal interviews, science grades, and LAB scores.

PROGRAMMING

Design Features

Participating students were to receive intensive instruction in English as a Second Language (E.S.L.) and Native Language Arts (N.L.A.) in Spanish or Cantonese. A six-term N.L.A. sequence was designed to provide remediation for students not literate in their native language. Instruction in mathematics, social studies, science, and computer science was to be provided in Spanish or Cantonese. Each student was to progress at his or her own pace in classes designed like workshops.

Both schools were to establish resource centers. Teachers, students, and consultants were to design, assemble, and test a series of science modules. Lafayette High School Spanish- and Cantonese-speaking students traveled bimonthly to Pershing Intermediate School to work with LEP students on these science modules.

The curriculum and staff development components were to focus on improving the hands-on, process-, and concept-based scientific experiences. College courses were to be offered to staff.

E.S.L./High School Equivalency (H.S.E.) classes were to be offered to the bilingual parents and adult siblings of project students.

Capacity building. Each of the sites will provide tax-levy classroom teachers to the project. Local tax-levy monies will continue to be used to purchase materials in the native languages of the students. The High School Division and Division of Bilingual Education of the New York City Public Schools, and the New York State Education Department will provide workshops for staff development.

Strengths and Limitations

The hands-on science activities in a workshop setting enabled the students to advance at their own pace. High school students tutored intermediate school students and served as role models for them.

Limitations included a need for more English instruction and a greater emphasis on preparation for college. Staff had not been hired on time for the 1991-92 academic year. In addition, one of the host schools was without an assistant principal. For these reasons, it was not possible for OREA to ascertain how many students the program served, or to get any information on those participants who were Spanish-speaking. Staff has been hired for 1992-93 so that the problem should not recur.

CONCLUSIONS AND RECOMMENDATIONS

Project E.T. was fully implemented. It met its objectives for Chinese N.L.A., content area subjects, the career education objective for the organization of a career conference and advisement, attendance rates, dropout prevention, and parental involvement. The project partially met its objective for curriculum development. It did not provide the information necessary to evaluate the objective for Spanish N.L.A.. Project E.T. did not meet its objectives for E.S.L., staff awareness of pupil needs and problems, and staff development.

The conclusions, based on the findings of this evaluation, lead to the following recommendations:

- Provide OREA with all required data.
- Explore reasons why fewer students than expected developed greater proficiency in English and implement a program designed to rectify the situation.
- Direct staff development sessions toward developing an increase of teacher awareness of students' needs and problems.
- Encourage project staff to enroll in relevant university courses.
- Intensify efforts to develop curricula as proposed.
- Supply OREA with all data necessary to evaluate objectives.

PROGRAM ASSESSMENT

STAFFING

Title VII Staff (Total 8)

Title	Degree	Language Competencies	Title VII Funding	Other Funding
Project Director	Ph.D.	Spanish	Full time	
Resource Specialist	B.A.	Cantonese	Full time	
Curriculum Developer	B.A.	Spanish	Part-time	Tax-levy
Curriculum Developer	B.A.	Spanish	Part-time	Tax-levy
Consultant	Ph.D.		Part-time	Tax-levy
Consultant	Ph.D.		Part-time	Tax-levy

Other Staff Working With Project Students (Total 10) (Data were provided for Lafayette High School only)

Degree		Certification		Language Competencies and Teaching/ Communicative Proficiencies (TP/CP)*	
B.A.	1	Spanish (D.H.S.)	1	Spanish	TP 5
M.A.	9	E.S.L. Ancillary	4	Chinese	TP 5
		Chinese (D.H.S.)	1		
		Bil. Social Studies	2		
		Physics	1		
		Biology	1		

All staff at Lafayette High School were certified in areas they served.

IMPLEMENTATION AND OUTCOMES (Objectives prefaced by •)

English as a Second Language (E.S.L.)

E.S.L. CLASSES*

Sites	Level	Periods Weekly	Students Enrolled	
			Chinese	Spanish
Lafayette High School	Beginning	5	15	25
	Low Intermediate	5	20	14
	High Intermediate	5	17	13
	Advanced	5	25	8
	Transitional	5	10	12
Pershing Intermediate School	Beginning	5	17	
	Intermediate	5	17	

*The numbers provided for E.S.L. enrollment fail to match the numbers provided in "Enrollment" and in "Student Background" because of missing data.

---

*Teaching Proficiency (TP): Competent to teach in this language.
Communicative Proficiency (CP): Conversational capability only.

See Appendix B for a list of instructional materials used in Lafayette High School. The project indicated that the E.S.L. texts used at Pershing Intermediate School were appropriate for grades six through eight, but did not submit a list of materials.

E.S.L. teachers emphasized whole class teaching and cooperative learning strategies. High school students tutored intermediate school students.

- As a result of participating in the program 70 percent of the targeted students will demonstrate an appropriate increase in English proficiency.

Evaluation Instrument: Language Assessment Battery (LAB)*

Pretest: May 1991; posttest: May 1992.

Number of students for whom pre- and posttest data were reported: 60

Percent of students with pretest/posttest gains: 35.0

Mean gain: 2.1 N.C.E.s (s.d.=7.4)

Mean gain is statistically significant ($t=2.23$, $p<.05$), but lower than the expected percentage of students showed a gain.

Project did not meet objective for E.S.L.

Native Language Arts (N.L.A.)

Students lacking native language literacy skills (estimated): Lafayette High School 0.0 percent, Pershing Intermediate School 75.0 percent.

N.L.A. was offered in Chinese and Spanish at the literacy, beginning, and intermediate levels five periods per week at Lafayette High School. At Pershing Intermediate School, N.L.A. was offered four periods a week in Chinese at the beginning and intermediate levels.

See Appendix B for a list of instructional materials used. The project indicated that the texts used for Pershing Intermediate School were on level but did not provide a specific list of materials.

N.L.A. teachers stressed oral presentations and repetition and drills for the lower levels. At the upper levels, teachers emphasized reading and writing with functional applications like interviews and letter-writing.

- As a result of participating in the program, 75 percent of the targeted Hispanic students will demonstrate a significant increase in native language achievement.

---

*OREA used a gap reduction design to evaluate the effect of supplementary instruction on project students' performance on the LAB. Since all LEP students in New York City are entitled to such instruction, no valid comparison group exists among these students, and OREA used instead the group on which the LAB was normed. Test scores are reported in Normal Curve Equivalents (N.C.E.s), which are normalized standard scores with a mean of 50 and a standard deviation of 21.06. It is assumed that the norm group has a zero gain in N.C.E.s in the absence of supplementary instruction and that participating students' gains are attributable to project services.

Evaluation Instrument: Pretest, Reading Subtest of Spanish LAB, May 1991; posttest, El Examen de Lectura en Español (ELE), May 1992.*

Project E.T. did not provide data on Spanish-speaking students at Lafayette High School.

The project director indicated that Pershing Intermediate School did not have a sufficient number of Spanish-speaking LEP students to justify the formation of a class. Teachers grouped students for peer tutoring by able Spanish-speaking students.

- As a result of participating in the program, 70 percent of the target Cantonese speaking students will demonstrate a significant increase in native language achievement by scoring 65 or better in final course grades.

Evaluation Indicator: final course grades.

STUDENTS EARNING PASSING GRADES IN NATIVE LANGUAGE ARTS

	Enrollment		Percent Passing	
Language	Fall	Spring	Fall	Spring
Chinese	51	54	98.0	100.0

Project met objective for Chinese N.L.A.

Content Area Subjects

Content area classes were not offered in Spanish because of an insufficient number of students.

Teachers used stories or visual aids to motivate lessons. They used whole class, small group, and individualized instruction using hands-on activities.

See Appendix B for a list of instructional materials used in Lafayette High School. Texts used at Pershing Intermediate School were appropriate, but Project E.T. did not submit a list of materials for that site.

- As a result of participating in the program, 70 percent of the targeted students will achieve scores at or above the passing criterion of 65 in the content subjects of social studies, science, mathematics, and computer education.

Evaluation Indicator: final course grades.

*Details for the evaluation design using the spring 1991 LAB administration as a pretest and the spring 1992 ELE administration as a posttest will be forthcoming.

STUDENTS EARNING PASSING GRADES IN CONTENT AREA COURSES

Sites		Fall		Spring	
	Subject	Enrollment	Percent Passing	Enrollment	Percent Passing
Lafayette High School	Mathematics	32	100.0	33	93.9
	Science	36	100.0	32	93.8
	Social Studies	34	97.1	33	100.0
	Computers	N/A	N/A	7	100.0
Pershing Intermediate School	Mathematics	29	93.1	33	100.0
	Science	29	96.6	33	97.0
	Social Studies	28	85.7	33	100.0
	Computers	29	96.6	34	97.1

Project met objective for content area subjects.

Career Education

Recent Lafayette High School students visited the school to share with project students their experiences in college and to discuss job skills needed and the importance of graduating.

- The program will organize at least one conference for students in which representatives of business and industry will present information on mathematics, science, computer career options, and skill requirements.

Evaluation Indicator: program records.

The project held a Career Day in the school library. Representatives from 20 different industries attended. Project students in the bilingual pre-engineering and computer institute programs attended the bilingual engineering program's career day.

Project met career education objective for the organization of a career conference.

- All graduating students will meet with the bilingual resource specialists, bilingual grade advisors, or guidance counselors for advisement at least three times during the school year.

Evaluation Indicator: program records.

All graduating students met with a guidance counselor at least three times.

Project met career education objective for advisement.

Other Activities

Project E.T. incorporated trips into the program so that participants could become more familiar with American culture. Students went to Philadelphia to see the sites of events in American history, to Ellis Island to see where earlier immigrants had entered this country, and to the Consolidated Edison facility in Brooklyn. Lafayette High School students visited the Freedom Trail in Boston.

In after-school and lunch hour training sessions, the project trained 20 students at Lafayette High School and 18 at Pershing Intermediate School to become peer tutors.

The project established a resource center in the library at each school where students learned to use the computer, printer, and xerox machine. Resource materials at each center were in the students' native language and English.

Attendance

To promote good attendance, the project called, sent letters to, and met with parents of absent students. Students received certificates for good attendance.

- As a result of participating in the program, students' attendance will be significantly higher than that of mainstream students.

Evaluation Indicator: attendance records.

ATTENDANCE RATES

High School	Project Students	Mainstream Students	Difference
John Pershing	98.4	88.7	10.3 *
Lafayette	99.8	80.1	19.7 *

*$p < .05$

Project met attendance objective.

Dropout Prevention

Project staff made home visits, contacted parents, and counselled and tutored students to prevent them from dropping out.

- As a result of participating in the program, the dropout rate of the students will be decreased.

Evaluation Indicator: program records.

No students dropped out.

Project met objective for dropout prevention.

Grade Retention

One student (1.4 percent of participants) was retained in grade.

Enrollment in Post-secondary Institutions

All graduating students wanted to continue their education beyond high school. The project did not report how many students actually enrolled in post-secondary institutions.

Students With Special Academic Needs

Referral to special education. Teachers referred students to the School-based Support Team (S.B.S.T.) for review. In Lafayette High School, the school psychologist was bilingual in Spanish. At Pershing Intermediate School, the social worker was bilingual in Chinese. No students at Pershing and Lafayette required special education services.

Remedial programs. No students were referred to remedial programs.

Gifted and talented programs. Gifted or talented students received services through the mainstream program. No students were referred to programs for the gifted and talented.

Mainstreaming

During the first year of the program no students were mainstreamed.

Staff Awareness of Pupil Needs and Problems

To increase their understanding of students' needs and problems, the staff held interdisciplinary meetings and assisted students with problem solving strategies.

- As a result of participation in the program, 80 percent of the staff will demonstrate increased awareness of pupil needs and problems.

Evaluation Instrument: OREA-developed 5-point Likert scale.

Eleven staff members completed the surveys of awareness of pupils' needs and problems. Eight (72.8 percent) indicated an increased awareness of pupil needs and problems.

Project did not meet objective for staff awareness of pupil needs and problems.

Staff Development

Staff development activities included practical workshops on the use and development of science modules in education and the organization of the resource centers.

- As a result of participating in the program, 50 percent of project staff will enroll in at least one university course each semester.

Evaluation Indicator: program records.

Three project staff (38 percent) took university courses during the 1991-92 school year.

Project did not meet objective for staff development.

Curriculum Development

Project staff developed Chinese-language curriculum materials for sequential mathematics, United States government, global studies, computer literacy, information technology, and other occupational-oriented materials. They also prepared Spanish language worksheets in mathematics and chemistry and a bilingual science glossary.

- By the end of the first year, the project staff will have completed at least ten science modules to be used in the peer tutoring component.

Evaluation Indicator: program records.

The project developed five science modules and bilingual curriculum materials for E.S.L. and N.L.A.

It was not possible to complete the required curriculum materials at Pershing Intermediate School as the resource specialist position was never filled. The project director indicated that a resource specialist has been appointed for the 1992-93 school year.

Project partially met objective for curriculum development.

Parental Involvement

Project parents attended E.S.L. classes. Meetings covered such topics as requirements for a high school diploma, study techniques, and getting to know the school.

The Parent Advisory Committee (PAC) met once a month to review project activities and to receive suggestions.

- As a result of participating in the program, students' parents who participate in Open School Day/Evening will be equal to or greater than the proportion of mainstream students' parents.

Evaluation Indicator: program and school records.

Fifty-two program parents (71.2 percent) attended the Open School Day/Evening conferences. Project E.T. did not provide OREA with the percent of mainstream parents who attended. However, since the percent of project parents who attended is so high, it is unlikely that the percent of mainstream parents would be any higher.

Project met objective for parental involvement.

Case History

The project did not submit a case history.

APPENDIX A

DATA COLLECTION AND ANALYSIS

COLLECTION

OREA evaluation consultants visit sites and interview key personnel. The project director gathers data and, with the consultant, completes forms (as shown below) as necessary.

Student Data Form

This one-page form is filled out by staff for each participating and mainstreamed student. OREA gathers data from this form on backgrounds, demographics, academic outcomes, attendance, referrals, and exit from the program.

Project Director's Questionnaire

The Project Director's Questionnaire includes questions on staff qualifications, program implementation, periods of instruction, and instructional materials and techniques.

Project Director's Interview

The interview gathers information on program and student or staff characteristics not supplied by the Project Director's Questionnaire. The interview also allows project staff to offer qualitative data or amplify responses to the questionnaire.

Citywide Test Scores

OREA retrieves scores centrally from the Language Assessment Battery (LAB) and other citywide tests. For evaluation purposes, these test scores are reported in Normal Curve Equivalents (N.C.E.s). N.C.E.s are normalized standard scores with a mean of 50 and a standard deviation (s.d.) of 21.06. They constitute an equal-interval scale in which the distance is the same between any two adjacent scores. A gain of 5 N.C.E.s is the same whether it is at the lower or the higher end of the scale. N.C.E.s can be used in arithmetic computations to indicate group progress. (Percentile scales, although more familiar to many, are unsuitable for such computations since they are not equal-interval.)

Likert-Type Surveys

Likert-type surveys, in which respondents mark their opinions on a scale from one to five, are used in a variety of ways. They examine student attitudes (i.e., toward school and career, native language use, and native and mainstream cultures). They also assess staff and parent attitude and reactions to workshops and other activities.

ANALYSIS

Gap Reduction Evaluation Design

OREA uses a gap reduction design for measuring changes in standardized tests. Since no appropriate non-project comparison group is available in New York City, where all students of limited English proficiency (LEP) are entitled to receive supplementary services, OREA compares the progress of participating students with that of the group on which the test was normed. It is assumed that the norm group would show a zero gain in the absence of instruction, and gains made by project students could be attributed to project services. Scores are reported in Normal Curve Equivalents (N.C.E.s), which are normalized standard scores with a mean of 50 and a standard deviation of 21.06. (See "Citywide Test Scores" above.)

To test whether pre/posttest gains are greater than could be expected by chance alone, OREA uses a *t*-test. To test whether a difference between two proportions (e.g., program and mainstream attendance rates) is

greater than could be expected by chance, OREA uses a *z*-test and reports the differences between the two proportions. The level of significance is set at .05 for all tests.

Techniques For Minimizing Error

The evaluation procedures minimize error by providing for proper administration of evaluation instruments through a combination of testing at 12-month intervals, appropriate analysis procedures and reporting.

Instruments of measurement include the LAB (see above), the Degrees of Reading Power (D.R.P.) test, the Metropolitan Achievement Test--Mathematics (MAT-Math), El Examen de Lectura en Español (ELE), Likert-type scales (see above), and project-developed tests. Except for Likert scales and project-developed tests, these instruments are scored on a citywide basis at the Scan Center of the New York City Public Schools.

APPENDIX B

INSTRUCTIONAL MATERIALS

E.S.L.

English With a Smile	Krulik/Zaffran	National Textbook Company	1987
Elementary Composition Book		Newbury	
Side by Side I-IV		Prentice Hall	
Contact U.S.A.		Prentice Hall	
From Sea to Shining Sea		Prentice Hall	
From Process to Product		Prentice Hall	
New Horizons in English	Mellgreen/Walker	Addison Wesley	1984
R.S.V.P.		Amsco School Publications	
Turning Points	Iantorno/Papa	Addison-Wesley Publishing Co.	1987
An O'Henry Reader	Iantorno/Papa	Addison-Wesley Publishing Co.	1987
Myths and Folktales	Potter/Robinson	Globe Book Company, Inc.	1980
Longsman Picture Dictionary			
Great American Short Stories	C. G. Draper	Prentice Hall Regents	1985
Elementary Reader in English	Robert Dixson	Prentice Hall Regents	1983
Easy Reading Selections	Mazzapelli	Prentice Hall Regents	1983
Open Ended Plays	Velder-Cohen	Globe Book Company, Inc.	1976
Tales Worth Retelling			
Moby Dick			

N.L.A.

Read About China			
Stories from Chinese History			
An English/Chinese Glossary for Occupational Education			
Hangre "2" for Beginners			
Character Text for Beginning Chinese			
The Four Books			
Chinese			
A New Practical Chinese/English Dictionary			
The Pocket English/Chinese Dictionary			
Chinese Language Arts	Byounghye Chang	Evaluation, Dissemination, and Assessment Center	1983
Chinese Step-by-Step	G. T. Wang	Addison Wesley	1986
Dos Novelas Picarescas		National Textbook Company	
Spanish 34RS Review		AMSCO	
Tres Novelas Latinoamericanas		National Textbook Company	
Cuentos Puertorriqueños		National Textbook Company	
Encuentros Culturales		National Textbook Company	

Mathematics

Integrated Mathematics, Course I, II, III		Amsco	1989-92
Concepts and Applications: Key Ideas in Mathematics		Harcourt, Brace, Jovanovich	

Social Studies

Exploring the Non-western World	Schwartz/O'Connor	Globe Book Company, Inc.	1986
Exploring World History	O'Connor	Globe Book Company, Inc.	1990
Unfinished Journey: A World History	Perry	Houghton Mifflin	1980
People and Our World: A Study of World History	Kownslar/Smart	Holt, Rinehart, and Winston	1981
World History: Perspectives on the Past	Jantzen, Neill, Krieger	D. C. Heath and Company	1988
Civics, Citizens, and Society	Kownslar/Smart	McGraw-Hill	1983
Government and You	Killoran, Zimmer, Fischer	Amsco	1987
Triumph of the American Nation	Todd/Curti	Harcourt, Brace, Jovanovich	1986
Economics Institutions and Analysis	Gerson Antell	Amsco	1987
Exploring Our Nation's History	O'Connor	Globe Book Company, Inc.	1969

Science

Concepts and Challenges in Science	S. Wolfe	Globe	1975
Modern Concepts in Physics	Weissman	Oxford	
Pathways in Biology	J. Oxenhorn	Globe	1974
Physical Science		D. C. Heath and Co.	1989
Physics: Principles and Problems	Murphy/Smoot	Charles E. Merrill Publishing Co.	1982
Biology and Human Progress	Charles Tanzer	Prentice-Hall Inc.	1986
Dynamic Earth		Prentice Hall	1967
Investigatng the Earth		Houghton Mifflin Co.	1967
Challenges to Earth Science	Robert Haller, et al.	McGraw-Hill, Inc.	1979
Concepts and Challenges in Earth Science	Leonard Bernstein, et al.	Allyn and Bacon, Inc.	1986
Earth Science	William L. Ramsey, et al.	Holt, Rinehart, and Winston	1978
Exploring the Universe		Prentice Hall, Inc.	
Modern Earth Science	William L. Ramsey, et al.	Holt, Rinehart, and Winston	1979
Earth Science	Jay M. Pasuchoff, et al.	Scott, Foresman, and Co.	1983
Earth Science	F. Martin Brown, et al.	Silver Burdett Co.	1970
Focus on Earth Science	Bishop/Lewis	Charles E. Merrill Co.	1969
Chinese Biology			
Chinese Physical Science			
General Science Ninth Grade	Seward Park High School Project CHAMP		
An English-Chinese Glossary for Physical Science	Seward Park High School		
Chinese Supplementary Text for Biology C (Genetics)	Seward Park High School		
Chinese Supplementary Text for Biology B	Seward Park High School		